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Zavod No. 346 in Leningrad

- Plant 346 in Leningrad manufactures optical equipment, including spectrographic apparatus, photographic objectives, optical projectors, copies of the former Zeiss optimeter, and rectangular coordinate measuring microscopes. All of these instruments were simply copies of former Zeiss instruments; they were fully as satisfactory as the ones produced at Zeiss but no different from them. The plant was directed by former Zeiss people, and the machine tools and optical working machinery had all been brought from the Zeiss/Jena plant.

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Instrument Production at Zavod No. 346

- The spectrographic and spectroscopic instruments made here were of the prism type and had quartz optics. No grating instruments were produced, [REDACTED] Thus, no diffraction gratings could have been produced.

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NAVY review completed.

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4. After the instruments left [] shop, they were taken to another department, which was air-conditioned, and were there tested and calibrated. /In the United States, this would be called a Standards Laboratory./ This department rejected about 20% of the instruments, and most of the flaws found were generally corrected in the assembly department, which meant that the errors were errors in assembly and not errors in the manufacture of the component parts.

The Optimeter

5. The optimeter is a device for optically comparing objects with a standard and gives an accuracy of about 0.00001 inch. Through an optical and mechanical magnifying system, a projected image of a scale is moved past a fiducial mark by an amount which is a function of the angle of tilt of a front surfaced mirror. This instrument was manufactured by the Zeiss plant as early as 1929 and is described in their old catalogues as well as on pages 333, 334, 335, and 336 of Vol. 1 of "Gauges and Fine Measurements" by F H Rolt and published by the MacMillan Co, Limited, of London. It is used for the checking of routine work in the manufacture of precision instruments, as well as for the checking of rough finished gauges in gauge laboratories.

Rectangular Coordinate Measuring Microscope

6. The rectangular coordinate measuring microscope was of the usual design. There was a long-focus microscope which could, with the aid of two micrometer screws, be moved in two perpendicular directions over an area of 200 mm x 100 mm. Two vernier scales made it possible to read the coordinate positions to an accuracy of 0.1 mm, and a micrometer disk in the eyepiece of the measuring microscope made it possible to read the final position to an accuracy of 0.001 mm. This instrument is used in jig and gauge manufacturing and can be found in any well-equipped firm which manufactures tools and gauges.

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